

## **UC Irvine**

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### **Title**

Virtual Resuscitation Curriculum and Testing

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**Abstract:**

**Introduction/Background:** The ACGME requires residents “demonstrate the ability to analyze the care they provide” and “play an active role in system improvement processes”. Our residents satisfy quality improvement (QI) requirements by assessing their practice pattern comparing it with evidence based medicine (EBM). While allowing for introspection, this method rarely results in systematic change.

**Curricular Design:** After identifying practice variation and performing literature appraisal at conference, residents and faculty draft a guideline. Residents perform chart reviews and data abstraction to quantify variation in practice and potential implications of the proposed guideline. Collaboration with relevant specialties results in finalization of guidelines and implementation. Pre and post implementation data collection and analysis is performed to assess policy effect.

**Impact/Effectiveness:** Practice variation was identified in acute coronary syndrome (ACS) evaluation. After literature review, the HEART score was selected to risk stratify patients. Chart abstraction identified variability in care and demonstrated the HEART score accurately predicted risk of major adverse cardiac events (MACE). After implementing the HEART score pathway, data abstraction was performed for 12 weeks and showed the HEART score accurately predicted the prevalence of MACE: 0% (95% CI 0-1%) for low risk group, 10% (95% CI 8-14%) for moderate risk, and 55% (95% CI 41-68%) for high risk. Implementation of an institution specific HEART score pathway increased admission for the moderate risk group by 38% (95% CI 29-47%), decreased median ED length of stay by 37 minutes (95% CI 17-58 min), and increased objective cardiac testing among moderate and high risk patients by 10% (95% CI 0-19%). The impact on resource utilization lead to increased access for ED patients with a HEART score of 4 to ED and rapid outpatient stress testing.

## 55 Virtual Morning Report: A COVID-Era Innovation with Advantages over Traditional Models

*Trevor Pour, MD; Samantha Ledonne, MD; Arjun Prabhu, MD; David Cisewski, MD; Elaine Rabin, MD; Andy Jagoda, MD*

**Learning Objectives:** Virtual Morning Reports was created as a practical replacement for traditional morning report, in order to create a space for interactive case based learning. Multiple additional benefits were realized after our one-year pilot.

**Abstract:**

**Introduction/Background:** The requirement for physical distancing during COVID has led to challenges in education. Emergency Medicine (EM) residencies pivoted to online educational conferences, however a need for interactive education previously met through Morning Report remained. Third-year Teaching Residents (TRs), who historically

supervised these sessions, also lost this opportunity for faculty-observed peer teaching.

**Educational Objectives:** VMR aims to fill the gap left by the cancellation of in-person educational activities. These goals are as follows: Allow for a venue for interactive discussion between students and faculty in a non-clinical space. Create an opportunity for TRs to hone teaching skills during their block. Create a model which is easily accessible to learners.

**Curricular Design:** VMR is held twice weekly using Zoom software, for strictly 30 minutes. The end time was enacted to ensure that participants can reliably schedule around VMR and see the entire presentation. Cases are presented by the TR, except for one monthly case by a pediatric EM fellow and one by a toxicology resident. Presentations encourage participation from the audience to develop a differential and discuss management. Residents on shifts have this half-hour protected and are expected to join, but sessions are optional for other residents. Individual feedback on session design is given by core faculty to the TR at the conclusion sessions.

**Impact/Effectiveness:** The first VMR occurred on May 12 and has continued without interruption all year. Participation ranges between 20-60 learners. VMR allows for off-service residents to stay in touch with our department. Faculty from multiple sites, who previously would not have venue to interact, discuss management with learners. Student participation includes pre-clinical as well as EM-bound students. “Virtual” clerkship students and interviewees are invited to VMR engage with our residency. This model is easily reproducible.

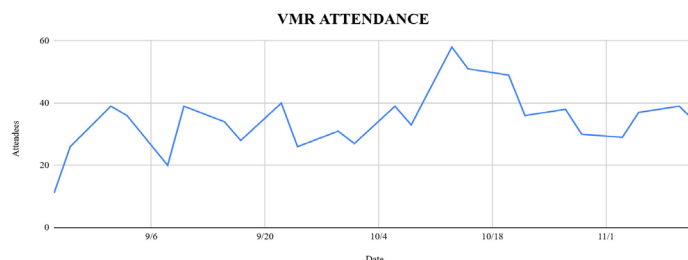


Figure.

## 56 Virtual Resuscitation Curriculum and Testing

*Zachary Aust, MD; Jedidiah Leaf, MD; Robert Barnes, MD; Shane Jennings, MD; Shelly Saha, MD*

**Learning Objectives:** Educational Objectives: Design a virtual critical care curriculum providing individualized education and formative evaluation to assess learner knowledge and address deficiencies.

**Abstract:**

**Introduction/Background:** Resuscitation is a cornerstone of EM. As our residents transition into the second year, they run our critical care/trauma pod. Prior to this they undergo

focused resuscitation education. This culminates with a high fidelity simulation and written test they must pass to be a pod leader. The prior written test was not an effective measure of learner knowledge.

**Educational Objectives:** Design a virtual critical care curriculum providing individualized education and formative evaluation to assess learner knowledge and address deficiencies.

**Curricular Design:** We designed an asynchronous curriculum consisting of podcasts and videos followed by a test. Topics deemed crucial for success in resuscitation were chosen. The test was designed to be given over Zoom as a PowerPoint presentation of 10 patient scenarios covering key concepts from the curriculum, followed by a more in depth review of the topic. Learners then took the test one on one with faculty. They were given a vignette with accompanying media (vitals, ECG,

ultrasound video) and asked what next critical steps to perform. After each vignette, faculty gave real-time feedback to the learners on their answers and thought processes. This allowed for deliberate practice in a virtual environment. At the end, they were scored on specific strengths/weaknesses based on a standardized rubric.

**Impact/Effectiveness:** The curriculum was completed by 22 residents. Three faculty administered the test. After testing, all residents were surveyed anonymously. All stated the test was beneficial to their education and preferred to a written format. Learners also highly rated the objective scoring system. Overall, the test reinforced the topics where our learners were most uncomfortable. We would like to apply this format to multiple areas of the EM curriculum. Next year, we will increase the number and variety of patient scenarios in addition to refining the format of questions and scoring system.

				Possible		
<b>Patient 1 (Unstable Vtach)</b>	(One point each unless stated otherwise)	<b>Arrhythmia</b>			<b>General Assessment/Reassessment</b>	
Recognize Unstable Vtach		Recognition	0	3		
Place Pad		Management	0	8	<b>STEMI Criteria</b>	
Synchronized Cardioversion		<b>Airway</b>			<b>Stroke</b>	
Appropriate Joules		Preox	0	4		
Repeat EKG		Meds	0	3	<b>Trauma</b>	
STEMI Yes or No		Approach/Troubleshooting	0	6	Exam	
		Surgical Airway	0	9	Management	
<b>Patient 2 (Cardiogenic Shock)</b>		<b>Management of Extremis</b>	0	19		
STEMI Yes or No						
ECHO/RUSH Assessment						
Recognize Cardiogenic Shock						
Start Norepinephrine						
<b>Patient 3</b>						
STEMI Yes or No						
<b>Patient 4 (Code Fast)</b>						
Correct Labs						

Figure 1. Scoring for virtual test.

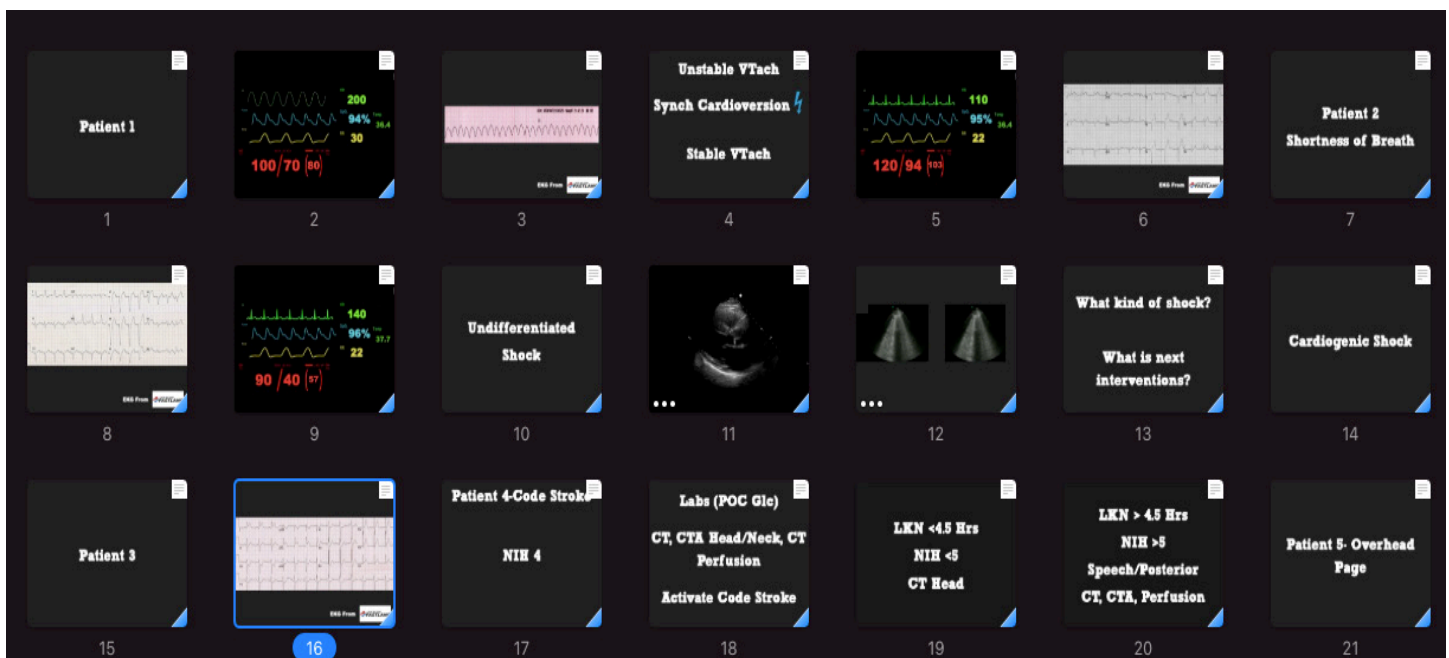


Figure 2.